# TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS



Expéditeur : le BUREAU INTERNATIONAL

# PCT

NOTIFICATION DE TRANSMISSION DE COPIES DE LA TRADUCTION DU RAPPORT D'EXAMEN PRELIMINAIRE INTERNATIONAL

(règle 72.2 du PCT)

Destinataire :

AUDIER, Philippe
c/o BREVATOME
3, rue du Docteur Lancereaux
F-75008 Paris
FRANCE

| | |
|---|---|
| Date d'expédition *(jour/mois/année)*<br>29 décembre 2004 (29.12.2004) | |
| Référence du dossier du déposant ou du mandataire<br>B13987.3EE | **NOTIFICATION IMPORTANTE** |
| Demande internationale n°<br>PCT/FR2003/001234 | Date du dépôt international *(jour/mois/année)*<br>17 avril 2003 (17.04.2003) |
| Déposant<br>COMMISSARIAT A L'ENERGIE ATOMIQUE etc | |

1. **Transmission de la traduction au déposant.**

Le Bureau international transmet ci-joint copie de la traduction en langue anglaise qu'il a faite du rapport d'examen préliminaire international établi par l'administration chargée de l'examen préliminaire international.

2. **Transmission d'une copie de la traduction aux offices élus.**

Le Bureau international notifie au déposant qu'une copie de cette traduction a été transmise aux offices élus suivants qui exigent la traduction en question:

AZ, CH, CN, CO, GH, KG, KP, KR, MK, MZ, RO, RU, TM

Les offices élus suivants ont renoncé à l'exigence selon laquelle la transmission doit être effectuée à cette date; ils recevront une copie de cette traduction du Bureau international seulement à leur demande:

AE, AG, AL, AM, AP, AT, AU, BA, BB, BG, BR, BY, BZ, CA, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EP, ES, FI, GB, GD, GE, GM, HR, HU, ID, IL, IN, IS, JP, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PH, PL, PT, SC, SD, SE, SG, SK, SL, TJ, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. **Rappel concernant la traduction dans la ou l'une des langues officielles de l'office ou des offices élus.**

Il est rappelé au déposant que, lorsqu'une traduction de la demande internationale doit être remise à un office élu, cette traduction doit comporter la traduction de toute annexe du rapport d'examen préliminaire international.

**Il appartient au déposant d'établir la traduction en question et de la remettre directement à chaque office élu intéressé (règle 74.1). Voir le volume II du Guide du déposant du PCT pour de plus amples renseignements.**



| | |
|---|---|
| Bureau international de l'OMPI<br>34, chemin des Colombettes<br>1211 Genève 20, Suisse | Fonctionnaire autorisé<br>Beate Giffo-Schmitt |
| n° de télécopieur+41 22 740 14 35 | n° de télécopieur+41 22 338 87 20 |

PCT/FR2003/001234

Translation

PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| Applicant's or agent's file reference | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
|---|---|---|
| International application No. PCT/FR2003/001234 | International filing date (*day/month/year*) 17 avril 2003 (17.04.2003) | Priority date (*day/month/year*) 19 avril 2002 (19.04.2002) |
| International Patent Classification (IPC) or national classification and IPC A61K 39/40 | | |
| Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| Date of submission of the demand | Date of completion of this report |
|---|---|
| 06 novembre 2003 (06.11.2003) | 07 July 2004 (07.07.2004) |
| Name and mailing address of the IPEA/EP<br><br>Facsimile No. | Authorized officer<br><br>Telephone No. |

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR2003/001234

## I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-35, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☒ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages 1-18, filed with the letter of 11 May 2004 (11.05.2004)

☒ the drawings:

pages 1/6-6/6, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, Nos. 19

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR2003/001234

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 1-7, 9-18 (all partially)

because:

☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _____ are so unclear that no meaningful opinion could be formed *(specify)*:

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 1-7, 9-18 (all partially).

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box III.1.

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Claims 1 to 7 and 9 to 18 (corresponding to claims 1 to 6 and 8 to 19 submitted with the original application) are unclear (PCT Article 6) and are not supported across the full scope of the claimed subject matter, since these claims include an excessive number of possible CD4 peptide derivatives. Although the independent claims are directed to a hybrid or a mixture comprising these possible derivatives, the scope of the element including these derivatives is not any clearer.

Since the search relating to the CD4 peptide derivatives was restricted to the derivatives defined by SEQ ID NOs:1 to 18, the examination has also been likewise restricted (PCT Rule 66.1(e)). The examination has been carried out with regard to part of the subject matter of claims 1 to 7 and 9 to 18. Claim 8 has been examined in full.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR 03/01234

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Claims | 1-7 (in part), 8 (in full), 9-18 (in part) | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 4, 9, 10, 13 (all in part) | YES |
| | Claims | 1-3, 7 (all in part), 8 (in full), 9-11, 12, 14-18 (all in part) | NO |
| Industrial applicability (IA) | Claims | 1-7 (in part), 8 (in full), 9-18 (in part) | YES |
| | Claims | | NO |

2. Citations and explanations

1. Reference is made to the following documents:

D1: WO9204909
D2: Witvrouw et al., General Pharmacology, 1997

2. D1 discloses the combined administering of dextrin sulphate and soluble CD4. D1 indicates (page 4, penultimate paragraph) that the agent of the invention (which is clearly the dextrin sulphate and the soluble CD4) is in the form of a pharmaceutical composition, which means that the two components are mixed. The dextrin sulphate (DS) is a polyanionic oside and anticoagulant which has a highly inhibitory effect on HIV replication *in vitro* (D2, page 500).

D2 shows that a maximum anti-HIV effect is achieved for sulphated polysaccharides having a molecular weight of more than 10000. D1 uses a molecular weight of 20000, which approximately corresponds to a degree of polymerisation of 100. The dextrin sulphate should be regarded as an equivalent to heparin.

The subject matter of independent claim 4 is novel, since the degree of polymerisation is less than that disclosed in D1. The technical problem to be solved consists in increasing inhibition of the link between HIV and cells using a composition containing both a polyanion equivalent to heparin and a molecule that can induce exposure of the CD4i epitope. This effect is achieved using a polyanion equivalent to heparin and which has a degree of polymerisation of 10 to 24, i.e. much lower than that disclosed in D1. D1 does not indicate that a reduction in the degree of polymerisation of approximately 100 in D1 to 10 to 24 could produce a better effect. In D2 (table 4), there is no significant difference between the HIV-1 cytopathogenicity inhibiting effect of dextran sulphate with a degree of polymerisation of 100 (molecular weight approximately 20000) and that of dextran sulphate with a degree of polymerisation in the range claimed (dp 10 to 24; molecular weight approximately 2000 to 4800) in claim 4. The prior art thus does not indicate that a reduction in the degree of polymerisation to 10 to 24 could increase inhibition of the link between the HIV virus and cells. The subject matter of claim 4 therefore involves an inventive step (PCT Article 33(3)). Dependent claims 9, 10 and 13 and claims 5 to 8, 15, 16, 17 and 18, insofar as they relate to claim 4 and the searched subject matter (see Box III.1), also involve an inventive step (PCT Article 33(3)).

The subject matter of claim 1 is novel, since the prior art does not disclose a composition containing a polyanion linked to a molecule that can induce exposure of the CD4i epitope (PCT Article 33(2)).

The difference between the closest prior art, D1, which discloses a composition containing both a polyanion and a molecule that can induce exposure of the CD4i epitope, and the subject matter of claim 1 is that the two elements are linked in claim 1. Since the linking of the two elements is an obvious modification for two molecules which should be active in the same location and since no surprising technical effect has been demonstrated, the subject matter of claim 1 cannot be considered to involve an inventive step (PCT Article 33(3)).

Dependent claims 2, 3, 11, 12 and 14 and claims 5 to 8 and 15 to 18, insofar as they relate to claim 1, do not contain any features which, when combined with the features of any one of the claims to which they refer, define subject matter that complies with the PCT requirements for inventive step (PCT Article 33(3)).

Additional comment:

3. The subject matter of claims 1, 2, 3, 11, 12 and 14 and of claims 5 to 8 and 15 to 18, insofar as they relate to claim 1, is not supported by the description (PCT Article 6) and is not sufficiently disclosed across the entire scope claimed (PCT Article 5) because the present application does not provide a person skilled in the art with the precise information required to determine the exact conditions in which a spacer is necessary for maintaining the combined effect of the two components without any loss in efficiency resulting from steric hindrance.